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ABSTRACT

Attitudes toward their ambulatory status of two groups of cerebral palsied (50 wheelchair status and 54 crutches and braces status) adolescents and young adults were compared. Analysis of questionnaire and demographic survey responses indicated that the wheelchair group viewed ambulation with crutches and braces in a more favorable light than did the crutches and braces group. Males in general, and males in the 20 to 29 age group specifically, produced the most consistent range of significance. The author concludes that better educational preparation of both professionals working with the cerebral palsied and the cerebral palsied themselves might help them prepare for the realities of society. (CL)

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A SURVEY OF ADOLESCENT AND POST-ADOLESCENT CEREBRAL PALSIED INDIVIDUALS TOWARD AMBULATION

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February 1980

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"A Survey of Adolescent and Post-Adolescent
Cerebral Palsied Individuals Toward Ambulation"

The purpose of this study was to compare the attitudes of two groups of cerebral palsied persons with respect to their feelings concerning their ambulatory status. The two groups compared were cerebral palsied persons whose principal means of community locomotion is with the assistance of crutches and braces and those cerebral palsied persons whose principal means of community locomotion is via a wheelchair.

Review of Literature

For the cerebral palsied individual surgery and/or physical therapy is usually a factor in such a person's life. Different authors have attempted to ascertain the effects of such procedures on the growth and development of the individual. Authors such as Scherzer et al.[1] and O'Reilly[2] have questioned the amount of surgery (and subsequent therapy) which is often performed on the cerebral palsied; while Wright and Nicholson[3] have questioned the beneficial effects of physical therapy in general.

Other authors such as Richardson[4] have attempted to ascertain from cerebral palsied individuals their attitudes toward themselves and their interactions with the cerebral palsy establishment. The interviewees raised such issues as stereotyped reactions, education, parents, communication, the problem of being helped, sex education, experiences essential for growing up and delivery of health services. With respect to stereotyped

reactions the interviewees complained that the non-handicapped population failed to consider them as human beings. After continued repetition, such reactions were so demoralizing that the cerebral palsied individuals felt they had to conform to society's preconceived notion of what being handicapped entails in order to exist within society.

Other areas criticized by the interviewees were the way they were often sheltered or restricted from gaining realistic life experiences. Parents were considered, by and large, overprotective, while professionals were concerned only with their own area of expertise. Lack of common sense and lack of flexibility were two charges often leveled at various professionals. One college-educated interviewee summed up her experience by stating she never learned English grammar because ". . . English grammar instruction was always the time I was sent for physiotherapy." She felt lack of such instruction made a challenging college experience more difficult. Other interviewees cited similar occurrences.

According to Richardson the most devastating criticism of the cerebral palsy establishment was the promise of "normalcy" held out by the professionals with whom the cerebral palsied child must deal. The professionals used the promise of normalcy as the reason for each new surgery, therapy, educational technique, etc. The interviewees wondered how they were supposed to learn to accept themselves for the way they were when the professionals with whom they had to deal could not.

The latter problem is echoed by Freeman[5] in his account of psychiatric problems in adolescents with cerebral palsy. After listing sexual

maturation, difficulty with interpersonal relationships and leaving school as problems which confront all adolescents, whether handicapped or not, Freeman adds giving up the fantasy of "normalcy" and the possibility of physical deterioration as psychiatric problems specific to the adolescent cerebral palsied individual.

Subjects

The subjects in this study were 104 cerebral palsied persons (fifty from the wheelchair group and fifty-four from the crutches and braces group). The criteria for the selection of subjects for the purpose of this study were as follows:

(1) age; a minimum of fourteen years of age (the maximum optimal age for the performance of orthopedic surgeries on the lower extremities (Denhoff[6]);

(2) level of intellectual functioning; if any of the subjects under consideration were self-sufficient monetarily, independent for self-care skills or possessed of sufficient intelligence to read and understand the instructions and items of the survey instrument (as attested to by the cooperating agency personnel), he/she was considered to have satisfied this criterion;

(3) ambulation; those who are community ambulators with crutches and braces were assigned to the ambulatory category, while those who are community ambulators with a wheelchair were assigned to the wheelchair category (this information was

obtained by self-report from the subject);

(4) ability to respond; for those unable to produce an appropriate mark on the survey instrument, the ability to convey to another by whatever means (e.g., head-stick, language board, etc.) his/her choice for any item on the survey instrument was acceptable; and

(5) sex; male and female subjects were included in the study.

Development of Assessment Instrument

The assessment instrument for this study was a Thurstone Scale devised by the author. The Thurstone Scale, first devised by Thurstone and Chave,[7] is an attempt to measure the personal attitudes of an individual toward a subject, topic or belief.

Originally sixty-three items were written to be presented to a group of sixty non-handicapped judges. The items used in the original pool were composed by the investigator, a medical doctor familiar with the needs and problems of the cerebral palsied, and a professor of educational psychology familiar with attitude measurement.

The original statements regarding attitudes about ambulation were presented to a group of sixty judges (all of whom were not handicapped) along with a set of relevant instructions. The comparison criterion was how favorable or unfavorable each judge considered each statement to be with respect to walking with crutches and braces (in contrast to ambulation via a wheelchair).

After the judges completed their ratings a final set of items to be

included in the survey instrument was selected. The criteria used in the selection of the items to be included in the survey instrument were as follows: (1) the median values of the survey instrument should include items demonstrating favorable, neutral and unfavorable attitudes toward the topic under discussion; and (2) the Q-values (P_{75}-P_{25}) for the items selected should possess a small Q-value (the smaller the Q-value, the greater the degree of rater agreement). The twenty items selected for the survey instrument had scale values ranging from 2.1 to 8.6 (see Table 1). The total mean value for the items selected was 4.95. A score of 1.0 is to be considered most favorable, while a score of 9.0 is to be considered most unfavorable toward the topic under discussion.

Procedure

After the subjects were identified for this study, each subject was requested to read and complete both a demographic information sheet and the survey questionnaire. The demographic information sheet requested information concerning present means of community locomotion (i.e., via wheelchair or with the assistance of crutches and braces), sex and age. The survey questionnaire contained directions which requested the subject to circle the number of each statement with which he/she agreed.

Upon the receipt of each completed survey questionnaire a numerical value was computed for each subject. The numerical value for each subject was computed by totaling the sum of the score values (from the judges' ratings) of the items chosen by each subject and dividing that sum by the total number of items selected. This mean value was the subject's

attitude score.

A one-way simple randomized design was used. The subjects were placed in each group as a result of their principal means of locomotion. Demographic information was collected on each subject to aid in the analysis of data. The pertinent demographic information collected from each subject included sex and age.

Results

An analysis of variance was conducted on the scores of the subjects. A series of t-tests were performed on the mean values of the scores computed from the categories presented on the demographic information sheet.

A statistically significant F-value was found when an analysis of variance was performed on the data. The null hypothesis states: There is no difference in the attitudes of cerebral palsied individuals who walk with crutches and braces and those in wheelchairs to their respective ambulatory status. The evidence presented in this study leads to a rejection of the null hypothesis at the .01 level of significance (see Table 2).

Since a significant F-value was found, an analysis of means was conducted for each of the relevant categories from the demographic information sheet in order to ascertain where differences in mean values existed (see Table 3). As expected, the difference in overall means was significant ($p < .01$). The significance of this result lies in the fact that the wheelchair group viewed ambulation with crutches and braces in an even more favorable light than did the crutches and braces group.

When the results are broken down according to the demographic

information collected, significant results are noted by sex (for males with $p < .001$) and by age (for the 20-29 age range with $p < .001$).

Discussion

The fact that males, in general, and males in the 20-29 age range, specifically, produced the most consistent range of significance may be a result of the realities which confront the cerebral palsied as they attempt to take their places within our economic system. For the wheelchair group the sheltered existence of house and school has given way to the architectural realities of our society which are insufficient to meet the needs of the wheelchair individual. The new reality for this group might well produce a highly favorable view of ambulation with crutches and braces. On the other hand, for the crutches and braces person who has often undergone years of surgery, physical therapy and parental encouragement to walk with crutches and braces, his/her new reality may be just as frustrating as for the wheelchair individual. This frustration may well lead to a degree of bitterness on the part of such individuals. The author, in informal interviews held with many of the subjects after completion of the assessment instrument, was impressed with the degree of such bitterness held by many of the crutches and braces subjects. The perceived promise of "normalcy" was the basis for such bitterness.

The need for increased and/or improved counseling and similar support services could be inferred from the data obtained in this study. The fact that both the wheelchair group and the crutches and braces group view ambulation with crutches and braces in a favorable light should not be too

surprising. The fact that the wheelchair group viewed ambulation with crutches and braces in a more favorable light than did the crutches and braces group, however, may be somewhat startling. The higher selection rate of the ambulation items by the wheelchair group might be an indication of how much the wheelchair people see their wheelchair status as a disability. Certainly a more architecturally amenable society might help to alleviate such problems, but the bulk of daily use architecture is already in place. Legislation, past and pending (e.g., Rehabilitation Act of 1973), promises improved architectural conditions, but implementation is often slow. Ramps and elevators may help with this problem, but counseling and other kinds of support services may also help to reconcile the wheelchair person to his/her ambulatory status.

For the crutches and braces group their apparent disenchantment (except for the 14-19 age range) with their ambulatory status must be a cause for concern. Certainly, not all therapeutic and/or surgical procedures will have a direct bearing on ambulation, but one can only wonder as to the reasons for the less favorable crutches and braces rating scores by the crutches and braces subjects. If the promise of normalcy is offered (or is perceived as being offered) to the crutches and braces person by medical professionals, therapists, parents, educators, etc., then the results of this study may add support to the reports of Richardson[4] and Freeman.[5]

Better educational programs for the cerebral palsied, professionals who deal with the cerebral palsied and society in general might help to

achieve some of the previously stated needs. Educational programs which help the cerebral palsied to appraise their limitations and expectations may help to prevent the post-school shock which appears to be experienced by the wheelchair group and the possible disillusionment expressed by the crutches and braces subjects of this study. The possible sheltered existence of the young wheelchair dependent cerebral palsied child should be supplemented by excursions into the present reality of our society, while similar excursions for the crutches and braces cerebral palsied person may also help to prepare him/her for existence within society.

The professionals who work with the cerebral palsied might also benefit from improved educational programs. There would appear to be nothing inappropriate about offering hope to the handicapped. Possibly, however, such hope needs to be tempered with reality. Educators, parents, medical and other allied health professionals should be more specific about the hopes and promises they offer the cerebral palsied. Realistic evaluation and discussion might not only decrease future disillusionment, but might also lead to acceptance of limitations and appraisal of possibilities.

Conclusion

In conclusion, better educational preparation of both professionals working with the cerebral palsied and the cerebral palsied themselves might help to prepare better the cerebral palsied for the realities of our present society. Better education of society in general might also help to prepare it for the realities of the cerebral palsied. The use of improved and/or more specific counseling targets might also be of

assistance. Finally, improved architectural design should continue to be stressed to make difficulties in ambulation less troublesome.

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List of Tables

Table 1. Survey Items with Score Values

Table 2. Summary Table of Analysis of Variance

Table 3. Summary Table of Analysis of Means

TABLE 1

Item	Median	Q-Value
1. People in wheelchairs are more likely to blame others when things go wrong than are people who walk with crutches and braces.	2.9	2.426
2. People who walk with crutches and braces are more selfish than people in wheelchairs.	8.2	1.923
3. Non-handicapped people expect too much from a person who walks with crutches and braces.	6.1	1.968
4. People who walk with crutches and braces have a better self-image than people in wheelchairs.	2.1	1.988
5. Parents expect too much from a person who walks with crutches and braces.	6.5	1.962
6. People who walk with crutches and braces are more comfortable around non-handicapped people than people in wheelchairs.	2.4	2.163
7. People who walk with crutches and braces are more likely to withdraw from others than people who are in wheelchairs.	7.4	1.629
8. If architectural barriers are present it is easier for a person who walks with crutches and braces to get around than a person in a wheelchair.	2.5	2.187
9. People who walk with crutches and braces are more likely to get upset if things do not turn out well than people in wheelchairs.	7.6	1.984
10. People who walk with crutches and braces are less warm, less polite and less courteous than people in wheelchairs.	8.6	1.177

TABLE 1--continued

Item	Median	Q-Value
11. People who walk with crutches and braces are more likely to be more attractive to members of the opposite sex than are people in wheelchairs.	2.6	1.822
12. People who walk with crutches and braces tend to complain more than people in wheelchairs.	8.2	1.733
13. It makes no difference how you get from place to place as long as you get there.	4.9	1.867
14. People who walk with crutches and braces are more dependent on others than are people in wheelchairs.	7.8	1.955
15. People who walk with crutches and braces are more likely to engage in self-pity than people in wheelchairs.	8.3	1.808
16. If architectural barriers are removed it is easier for a person who walks with crutches and braces to get around than a person in a wheelchair.	2.3	2.410
17. Toileting is easier for a person who walks with crutches and braces than for a person in a wheelchair.	2.5	2.334
18. Non-handicapped people are more willing to assist those who walk with crutches and braces than those in wheelchairs.	4.2	2.862
19. Recreational facilities are more accessible for a person who walks with crutches and braces than for a person in a wheelchair.	2.4	1.823
20. Opportunities for advanced education are greater for people who walk with crutches and braces than for people in wheelchairs.	2.4	1.929

TABLE 2

Source	SS	df	MS	F
Between Groups	4.1130	1	4.1130	7.5343*
W. hin Groups	55.6786	102	0.5459	
Total	59.7916			

*p < .01

TABLE 3

Source	Wheelchair			Crutches and Braces			
	$\bar{X}$	S^2	N	$\bar{X}$	S^2	N	t
Total	3.4952	0.4471	50	3.8931	0.6176	54	2.74*
Sex							
Male	3.4313	0.4615	30	4.1628	0.7201	25	3.48**
Female	3.5910	0.4105	20	3.6607	0.4116	29	0.36
Age							
14-19	3.8880	0.5015	15	3.6010	0.5727	10	-0.93
20-29	3.3013	0.3433	15	4.2163	0.4344	16	3.94**
30-39	3.5200	0.2654	4	3.7575	0.7434	12	0.49
40-49	3.2473	0.2382	11	3.7533	0.2862	9	2.10
50	3.4240	0.4839	5	3.9843	0.8813	7	1.03

*$p < .01$

**$p < .001$